



QUARTERLY NOISE REPORT FOURTH QUARTER 2020



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Overview This report provides a review of the aviation noise program for the 4th Quarter of 2020 (October 1 to December 30). Included in this report is information on jet aircraft operations, observance rates for noise abatement procedures, complaints received about aircraft noise, and community outreach efforts by the Maryland Department of Transportation Maryland Aviation Administration (MDOT MAA). The table below displays various measurements for 2020 in comparison to the 4th Quarter of 2019.

Measurement	4th Quarter (2019)	4th Quarter (2020)
Average Daily Jet Operations	686	420
Average Daily Night-time Operations	112	37
Complaints to Noise Office	159,754	219,765
West Flow Operations	72%	78%



Definitions

Maryland Department of Transportation Maryland Aviation Administration (MDOT MAA): Operator of Baltimore/Washington International Thurgood Marshall Airport (BWI Marshall Airport).

Decibel (dBA): A unit of measurement of sound pressure adjusted for the human ear's response to particular frequencies.

Day-Night Average Sound Level (DNL or Ldn): A descriptor of 24-hour noise (midnight to midnight) that adds a ten-decibel (dB) nighttime penalty to noise events which occur between the hours of 10 p.m. and 7 a.m to account for the intrusive nature of noise at night. This metric is required by FAA and COMAR.

Airport Noise Zone (ANZ): An area of land surrounding the airport within which noise levels are equal to or greater than DNL 65 dBA.

Code of Maryland Regulations (COMAR): Requires MDOT MAA to control development in areas where noise levels are DNL 65 dBA or more.



MDOT MAA Noise Section Mission Statement

The Noise Section of the Office of Environmental Services is committed to monitoring aircraft operations and airport related noise levels in the communities surrounding BWI Marshall and Martin State Airports, and is dedicated to helping stakeholders understand the facts, science and regulations associated with airport noise in a transparent, clear and accessible way to those we serve.

Website: <https://www.maacommunityrelations.com>

Noise complaints may be submitted at this website, via phone at (410) 859-7021, via WebTrak interface, via email to maanoiseabatement@bwiairport.com, via Airnoise.io, or via mail.



MDOT MAA



Frequently Asked Questions

MDOT MAA has developed a list of frequently asked questions regarding aircraft noise topics. The full list can be accessed at:

<https://maacommunityrelations.com/content/contactus/faqs.php>

Can MDOT MAA change flight paths?

No. The FAA controls and regulates the airspace. Any changes in departure or arrival paths must be approved and implemented by the FAA.

Who instructs aircraft where to fly?

The FAA is the sole organization in the United States responsible for the movement of aircraft both on the ground and in the air.

Will filing a complaint bring about an immediate change to flight paths?

Filing a complaint will not bring about an individual's desired change, rather it provides a means for the Airport to gather information, report, and disseminate the information to the FAA, airlines, public, and local representatives.

Why was I awoken last night by aircraft noise?

BWI Marshall Airport operates 24 hours per day, 365 days per year. There is no nighttime curfew at the airport.

Can MDOT MAA restrict where aircraft fly and when?

No.



Airport Operations

This section presents information on the level of operational activity at BWI Marshall Airport; including air traffic levels by jet aircraft, runway use, and flight corridors.

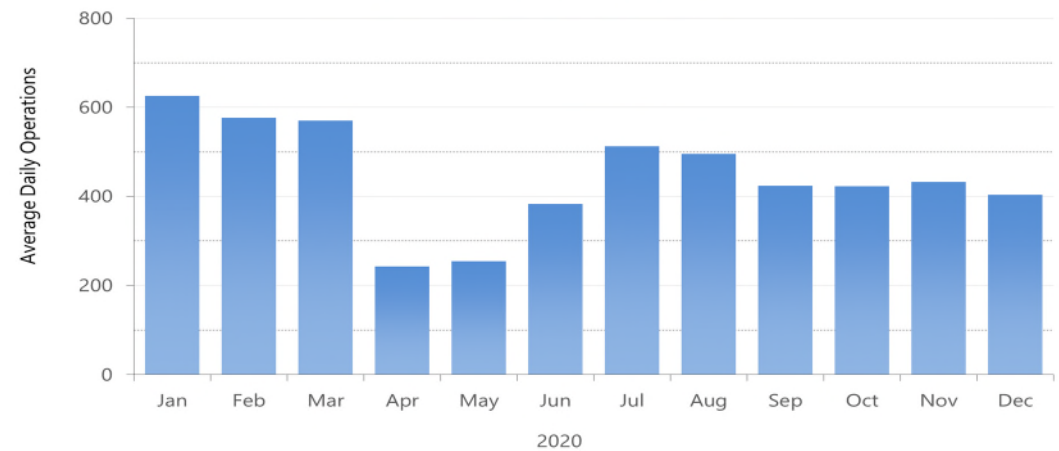


Jet Operations and Nighttime Activity

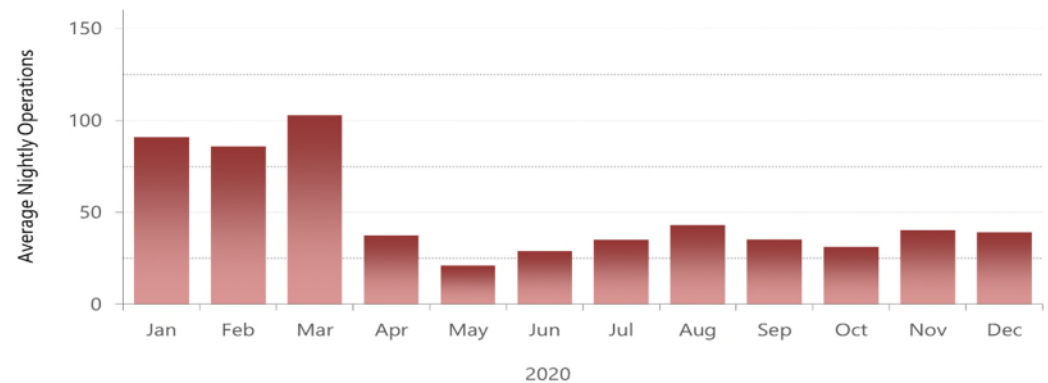
The first figure shows the average number of daily jet flights at BWI Marshall, including arrivals and departures by air carrier, business jet, and cargo jet aircraft. The figure also presents data for the preceding nine months, for a twelve-month total. The average daily number of jet operations during the 4th Quarter of 2020 was 420.

The next figure presents nighttime air carrier, business jets and cargo jet operations. At BWI Marshall Airport, a nighttime operation is defined as an arrival flight or departure flight that occurs between the hours of 10 p.m. and 7 a.m. The average number of nighttime jet operations was approximately 37 per night during the 4th Quarter of 2020.

Average Daily Jet Operations



Average Nightly Passenger & Cargo Jet Operations





Most Frequent Aircraft Operations at BWI Marshall

The following table represents the top ten aircraft by type and operations count at BWI Marshall for the 4th Quarter of 2020.



Fourth Quarter 2020 Top Ten Aircraft Operations	
Aircraft Type	Operation Count
Boeing 737-700	15,632
Boeing 737-800	11,314
Cessna 208	1,998
Airbus A320	1,670
Boeing 767-300	969
Airbus A321	901
Boeing 767-200	853
Airbus A319	735
Boeing 737-900	734
Airbus A320 Neo	659

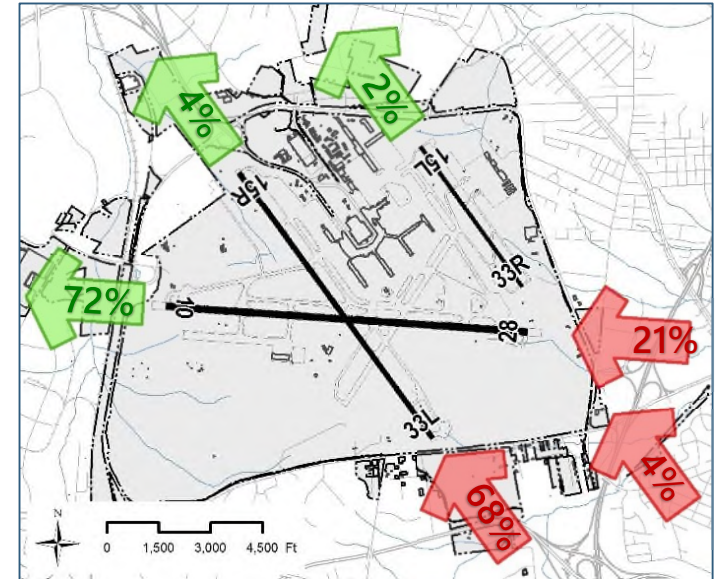
Runway Use

The MDOT MAA maintains a preferential runway use program to minimize the aircraft noise impact on neighboring communities. For noise abatement purposes, west flow (aircraft departures to the west) is preferred. Prevailing wind speed, direction and weather factors determine the direction of air traffic flow. Aircraft usually take off and land into the wind to meet safety and operational requirements. The figures to the right show jet runway use for the 4th Quarter of 2020.

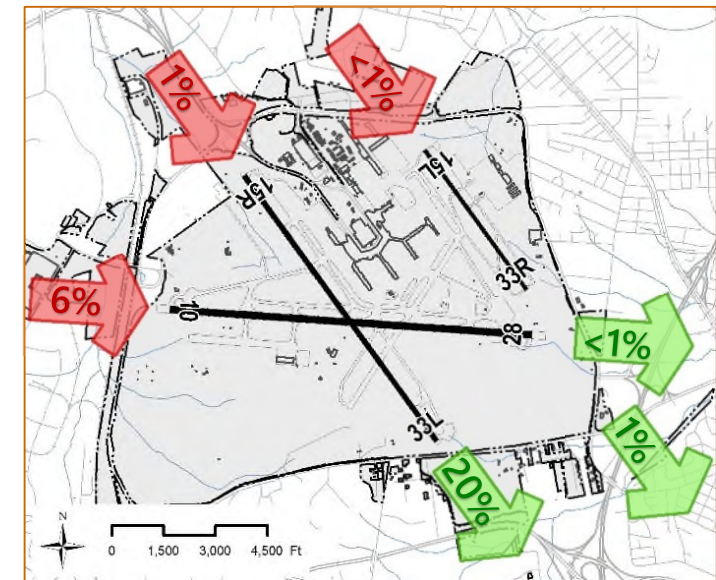
During west flow, all jet aircraft primarily depart (green arrows) from Runway 28 and arrive (red arrows) on Runway 33L, as shown in the top figure to the right. Historical trends result in annual average west flow of about 70%.

During east flow, all jet aircraft primarily depart (green arrows) from Runway 15R and arrive (red arrows) on Runway 10, as shown in the bottom figure to the right. Historical trends result in annual average east flow of about 30%.

**West Flow
Runway Use**
78% in Fourth Quarter 2020
(Historical Annual Average of 70%)



**East Flow
Runway Use**
22% in Fourth Quarter 2020
(Historical Annual Average of 30%)

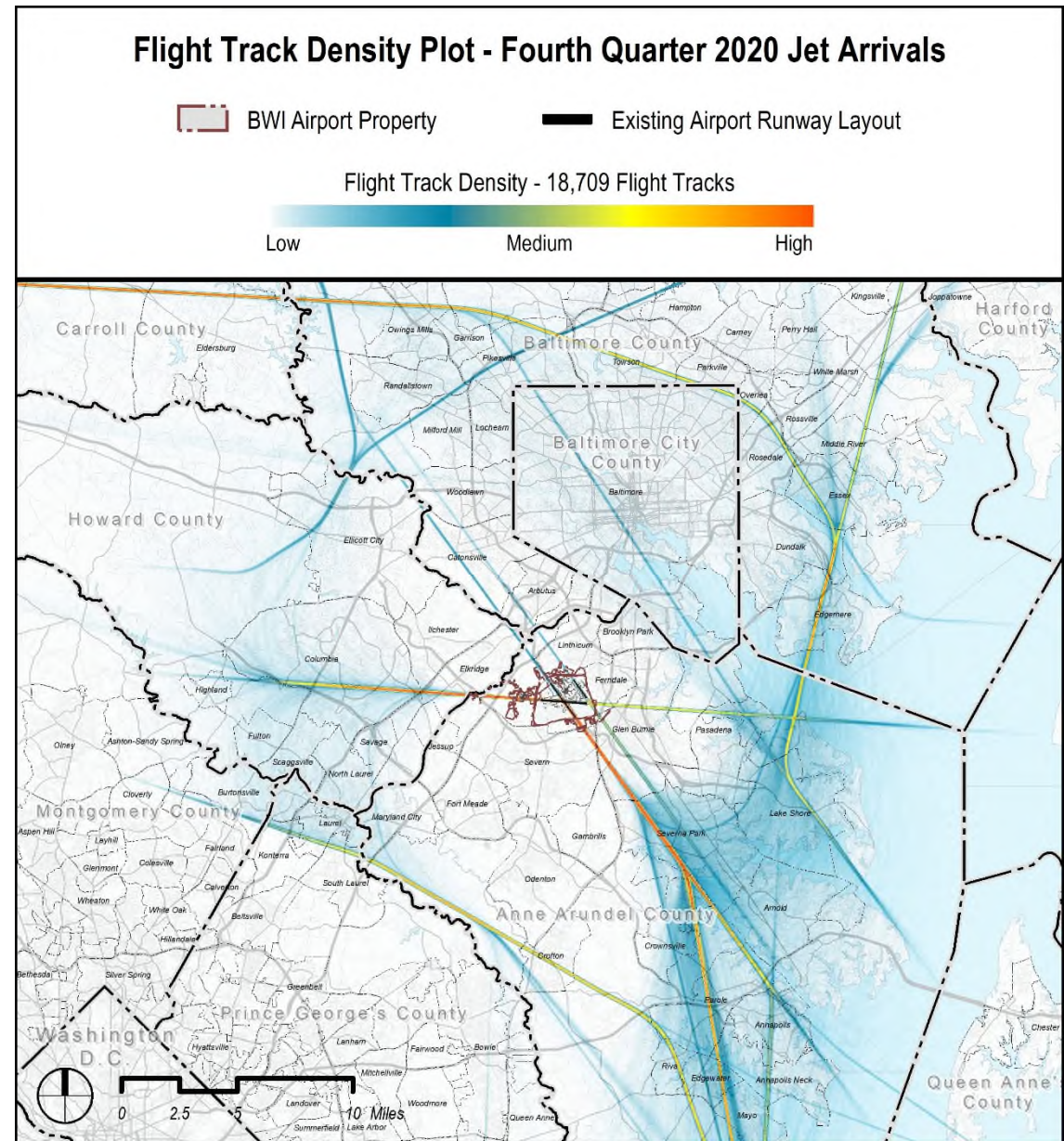


Flight Corridors – Jet Arrivals

The following figures depict the flight corridors at BWI Marshall Airport for jet arrivals and jet departures as derived from BWI Marshall Airport's Noise and Operations Monitoring System (NOMS).

The figure to the right shows jet arrivals during the 4th Quarter of 2020.

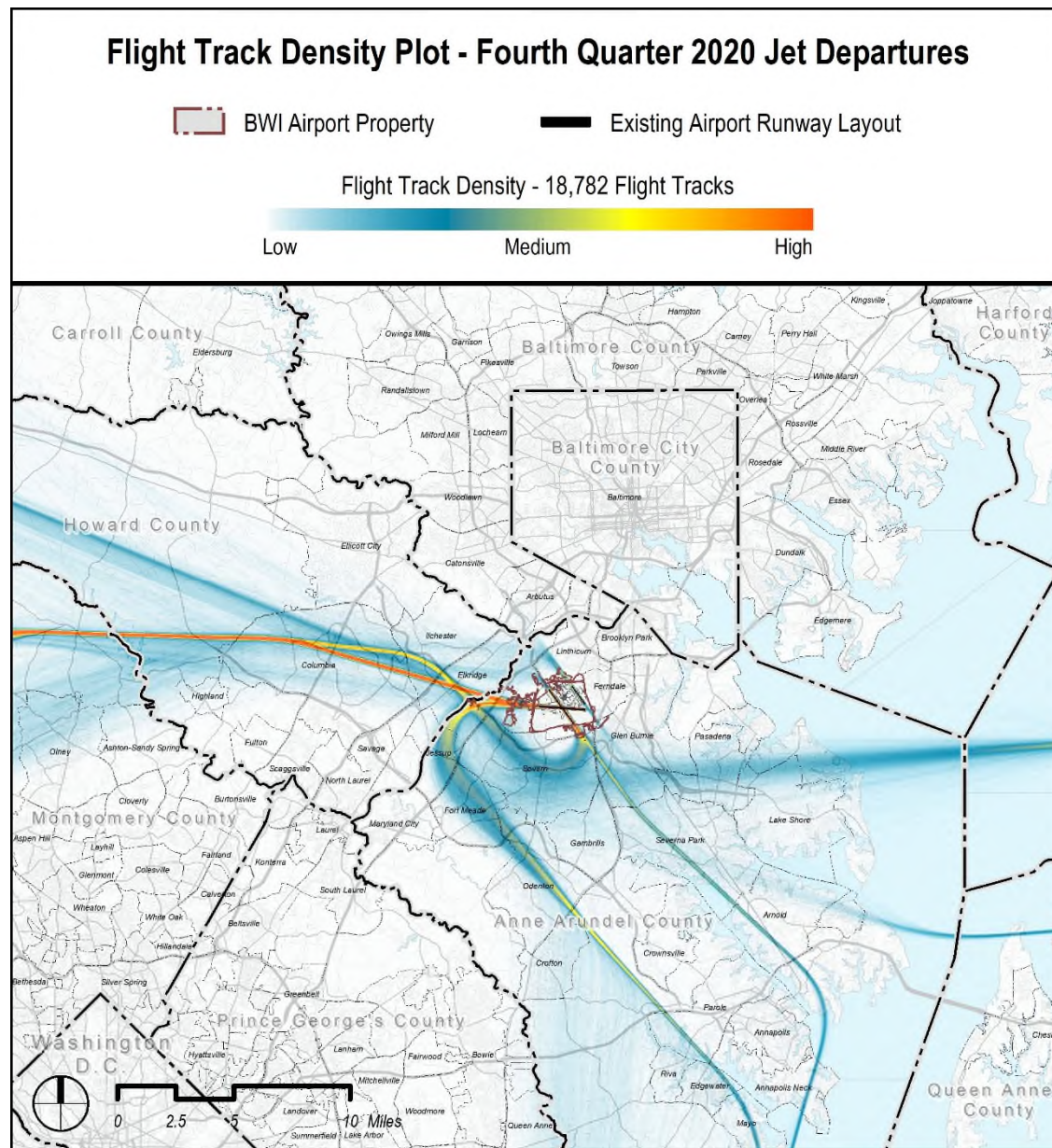
This flight track density plot uses color gradations to depict the flight track geometry, dispersion, and relative frequency of overflights. The color ranges are assigned based on the relative density of aircraft operations. Orange shows the highest density of flights, fading to yellow and then blue as the density decreases.



Flight Corridors – Jet Departures

The figure to the right shows jet departures during the 4th Quarter of 2020.

This flight track density plot uses color gradations to depict the flight track geometry, dispersion, and relative frequency of overflights. The color ranges are assigned based on the relative density of aircraft operations. Orange shows the highest density of flights, fading to yellow and then blue as the density decreases.



Observance of Noise Abatement Procedures

Adherence to approved noise abatement measures is voluntary and subject to change based on weather, efficiency, and safety.

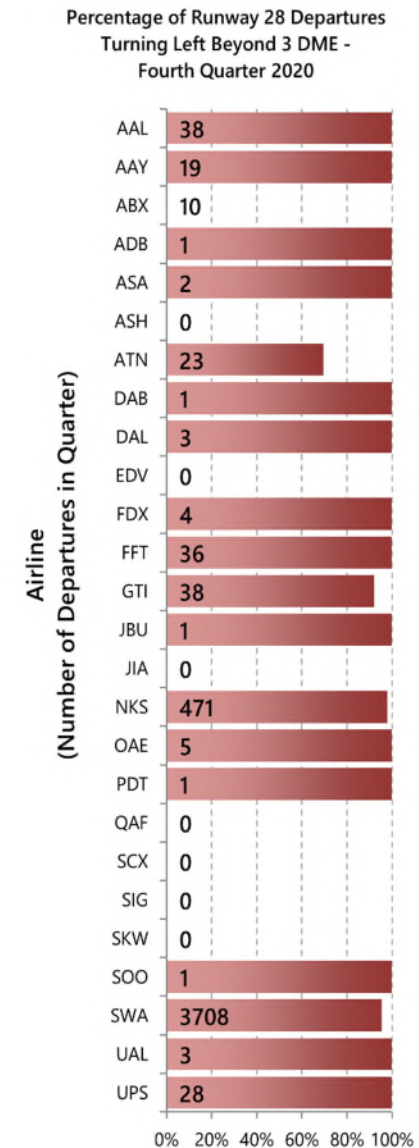
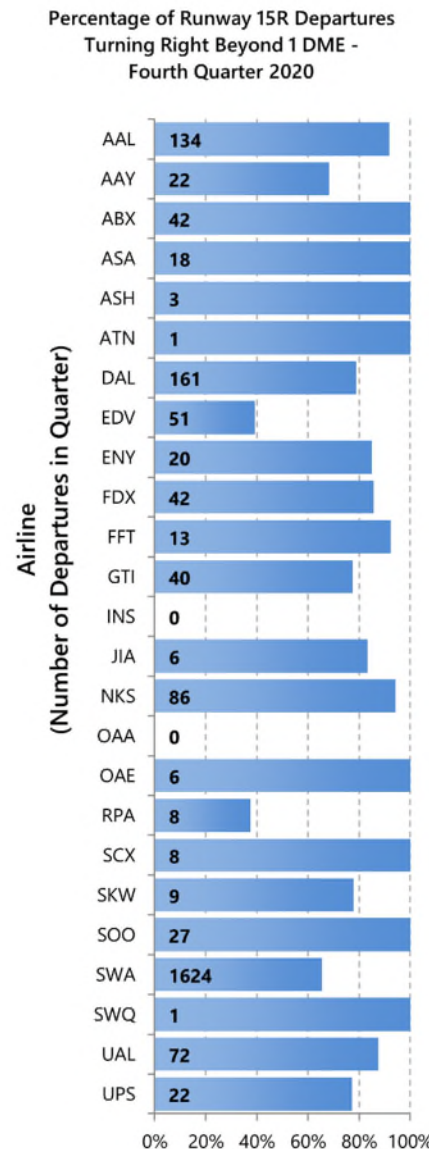
The graphs to the right show how the major carriers and cargo operators perform on the two noise abatement procedures of most interest to the local communities. These procedures are:

1. Runway 15R departures initiating their right turns at, but not prior to, 1 DME
2. Runway 28 departures initiating their turns at, but not prior to, 3 DME

The graphs show the percentage of flights for each airline which comply with each of the two procedures. Each bar also provides the number of operations by each airline subject to the noise abatement procedure. DME stands for Distance Measuring Equipment, and is the measured slant range from the aircraft to the navigational aid located near the center of the Airport. One DME equals one nautical mile.

For the 4th Quarter of 2020, 69% of departures turning right from Runway 15R initiated their turns beyond 1 DME.

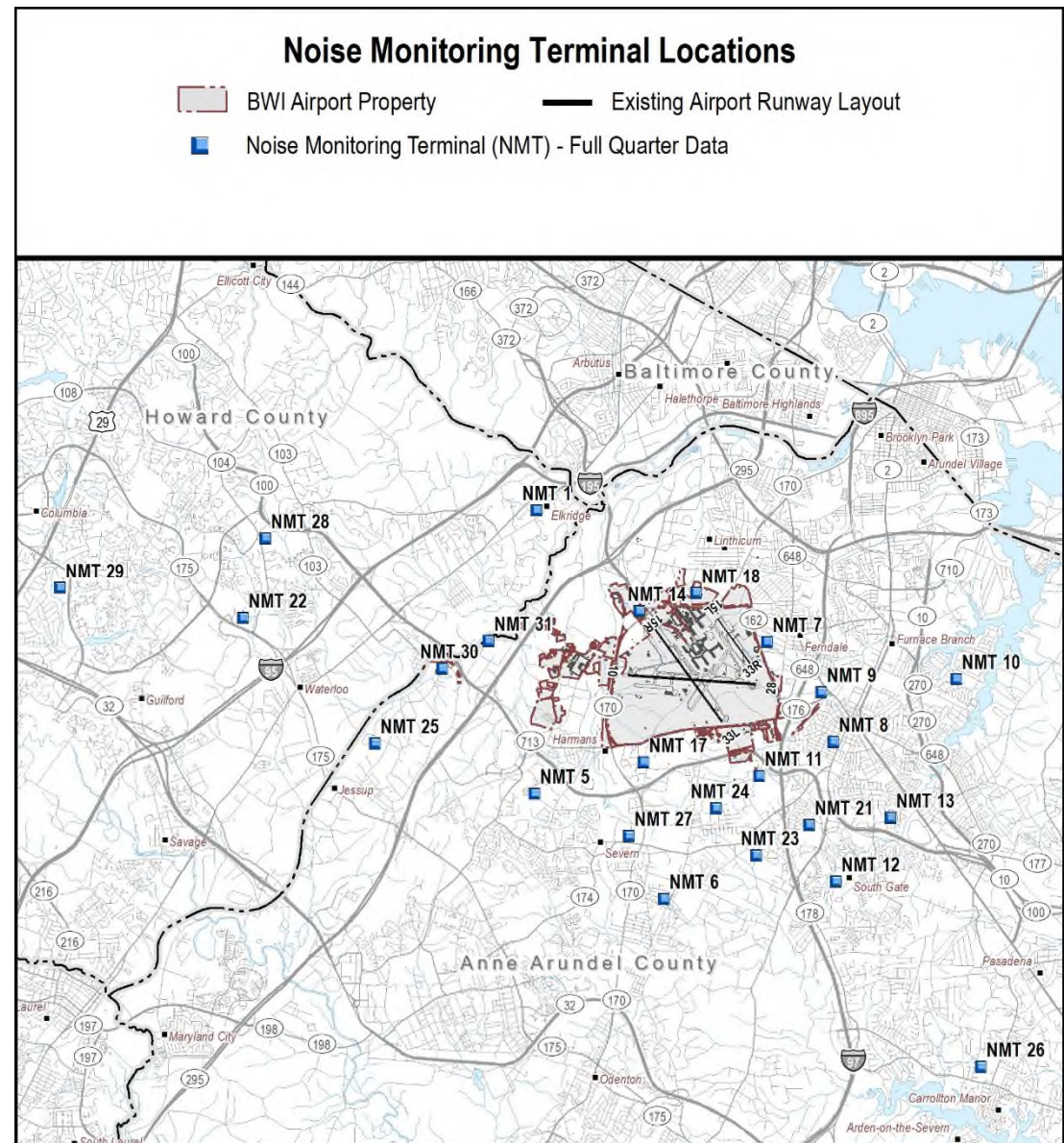
For the 4th Quarter of 2020, 96% of departures turning left from Runway 28 initiated their turns beyond 3 DME.



Noise Monitoring Program

MDOT MAA has 24 permanent Noise Monitoring Terminals (NMTs) located within the communities surrounding BWI Marshall Airport.

The table on the following page provides the quarterly Aircraft, Community, and Total DNL values at each site. At some sites, community or environmental noise levels (street traffic and other neighborhood noises) exceed aircraft noise levels.



Fourth Quarter 2020 Aircraft, Community and Total DNL				
NMT#	Location	Aircraft DNL (dBA)	Community DNL (dBA)	Total DNL (dBA)
1	St. Augustine Church, Elkridge	40.3	57.2	57.2
5	Hebron-Harman Elementary, Hanover	47.3	56.9	57.3
6	Delmont United Methodist, Severn	48	56.4	56.8
7	Wicklow Woods, Ferndale	50.6	59.2	59.6
8*	Richard H. Lee Elementary School, Glen Burnie	49.4	62.2	62.1
9	Maryland National Guard Armory, Glen Burnie	54.3	61.6	62.1
10	Margate Pumping Station, Glen Burnie	45.6	67.7	65.4
11	Jones Rd., Queenstown	64.6	62.2	66.6
12	Rippling Woods Elementary, Glen Burnie	58.1	58.4	61.2
13	Woodside Elementary, Glen Burnie	45.3	58	58.2
14	Runway 15R Approach	54.3	65	65.3
17	Timber Ridge Rd., Hanover	41.9	57.6	57.6
18	Runway 15L Approach	53.2	57.2	58.7
21	Glen Burnie Park Elementary, Glen Burnie	56.9	59.1	61.2
22	Lark Brown Road, Columbia	51.1	58.6	59.1
23	Quarterfield Elementary, Severn	52	57	57.9
24	Poplar Grove HOA, Elmhurst, Severn	53.8	59.4	60.2
25	Belclare Court, Jessup	48.1	59.4	59.1
26	Benfield Elementary, Severna Park	52.9	56.9	58.5
27	Severn Elementary School	50	60	59.8
28	Maryland School for the Deaf, Ellicott City	49.8	57.5	58.1
29	MDOT Motor Vehicle Administration, Columbia	44.7	57.1	57.2
30	Forest Ave, Hanover	58.9	62.6	64
31	Race Road, Hanover	58.1	57.9	61

*NMT8 had an outage from December 3, 2020 through December 7, 2020.



Residential Portable Noise Monitoring

The portable noise monitoring program is conducted by the MDOT MAA's Office of Environmental Services - Noise Section.

The residential portable monitoring program measures noise levels in selected areas on a temporary basis (typically for a two-week period) upon request of a homeowner. The final report provides aircraft noise levels for each day, the percentage of east/west operations, and general information about noise measurements and airport operations.

Portable Noise Monitoring Reports and online applications for residential portable noise monitoring can be found here:

www.maacommunityrelations.com/content/anznoiseupdate/portnoisemonitoring.php

The portable monitoring program is on hold due to COVID-19. The program will resume as soon as practical and safe.

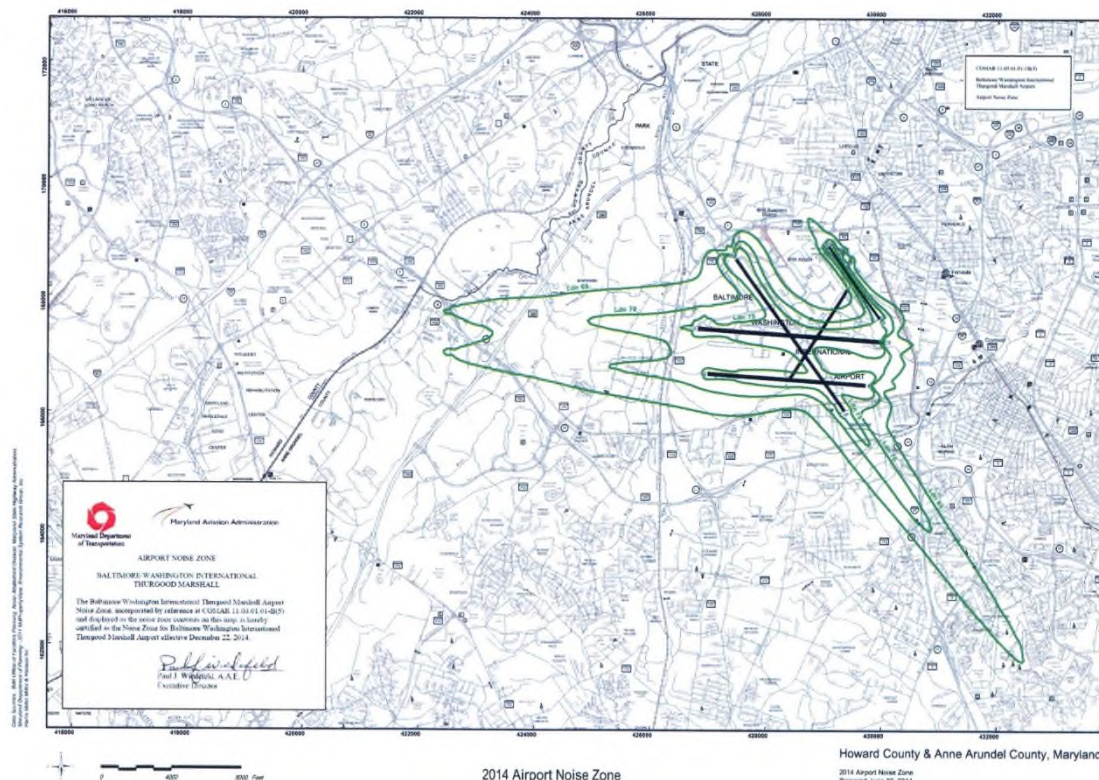




Airport Noise Zone

The Maryland Environmental Noise Act of 1974 provides for the protection of citizens from the impact of transportation-related noise. The aviation portion of the Act requires the MDOT MAA to create a certified Airport Noise Zone (ANZ) to control incompatible land development around BWI Marshall Airport and a Noise Abatement Plan (NAP) to minimize the impact of aircraft noise on people living near the Airport. An ANZ and NAP were first established for BWI Marshall Airport in 1976. Both were updated in 1982, 1988, 1993, 1998, and 2007. The latest update to the ANZ became effective on December 22, 2014.

The ANZ is determined by a composite of three noise contours: a base year contour, a five-year forecast, and a ten-year forecast. The largest of the three contours in any area around the Airport determines the outline of the ANZ, thereby offering protection within the largest of the existing or future noise contours. The contours depict the Day-Night Average Sound Level (DNL) around BWI Marshall Airport. Both the State of Maryland and the FAA require the use of the DNL metric by all airports conducting environmental studies. The current 2014 ANZ is depicted to the right.



MDOT MAA is currently updating the Martin State and BWI Marshall Airport Noise Zones. The Public Workshop and Public Hearing on the MTN ANZ is scheduled for January 26, from 6:00 p.m. to 8:00 p.m., and the Public Workshop and Public Hearing on the BWI Marshall ANZ is scheduled for January 28, from 6:00 p.m. to 8:00 p.m. More information, including the Draft documents and meeting registration information, is available on the MAA Community Relations website at www.maacommunityrelations.com.

Further information on the ANZ can be found here:

<http://www.maacommunityrelations.com/content/anznoiseupdate/bwianz.php>

Outreach and Community Involvement

The MDOT MAA engages in on-going efforts to enhance the level of communication and interaction between the Airport and area residents.

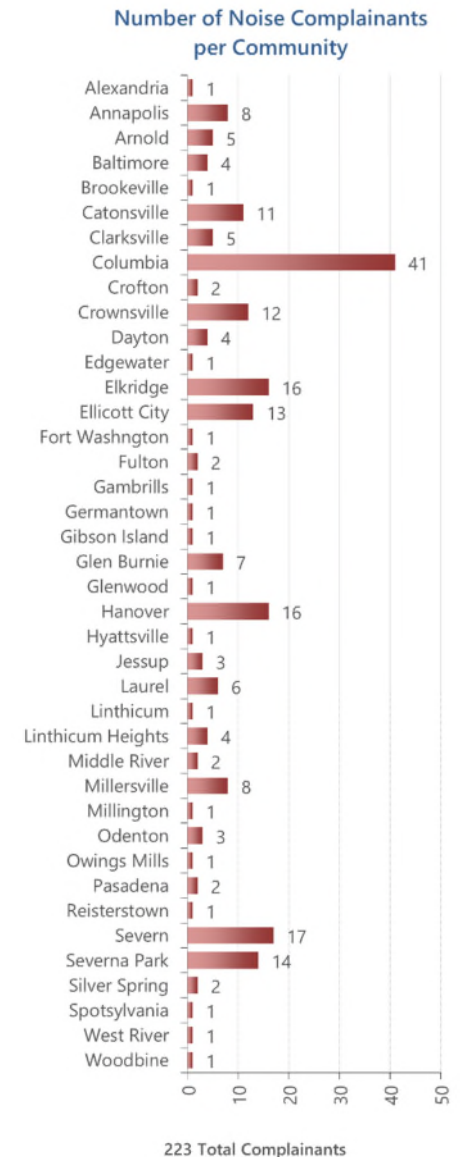
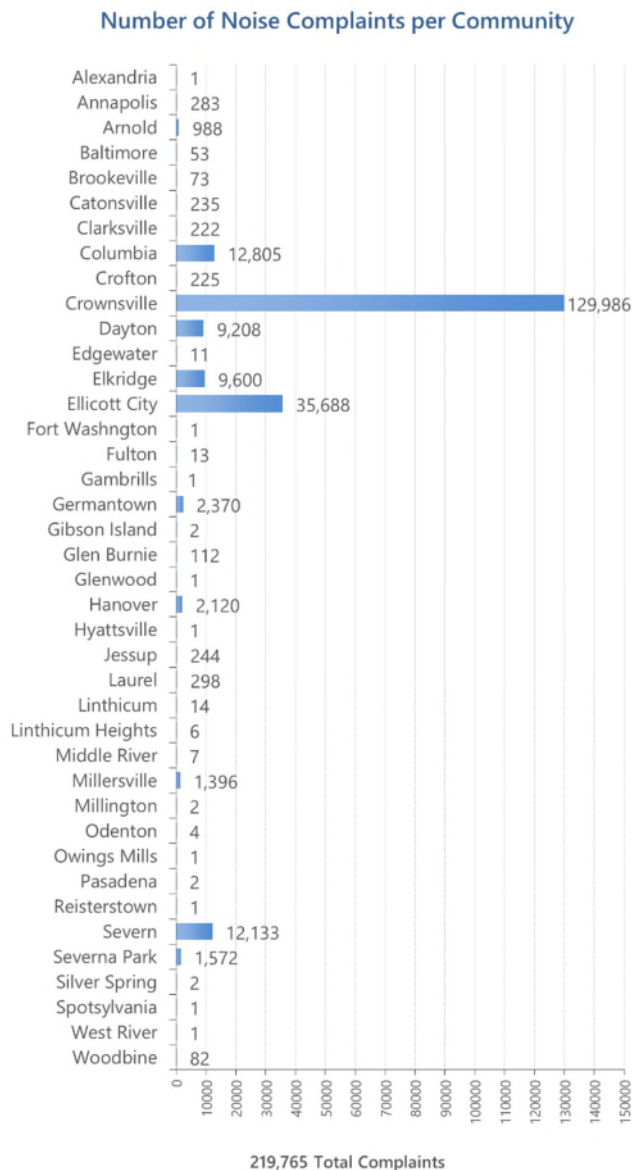
Airport Noise Complaints

The MDOT MAA maintains a 24-hour Airport Noise Hotline at (410) 859-7021. Noise complaints can also be entered online at:

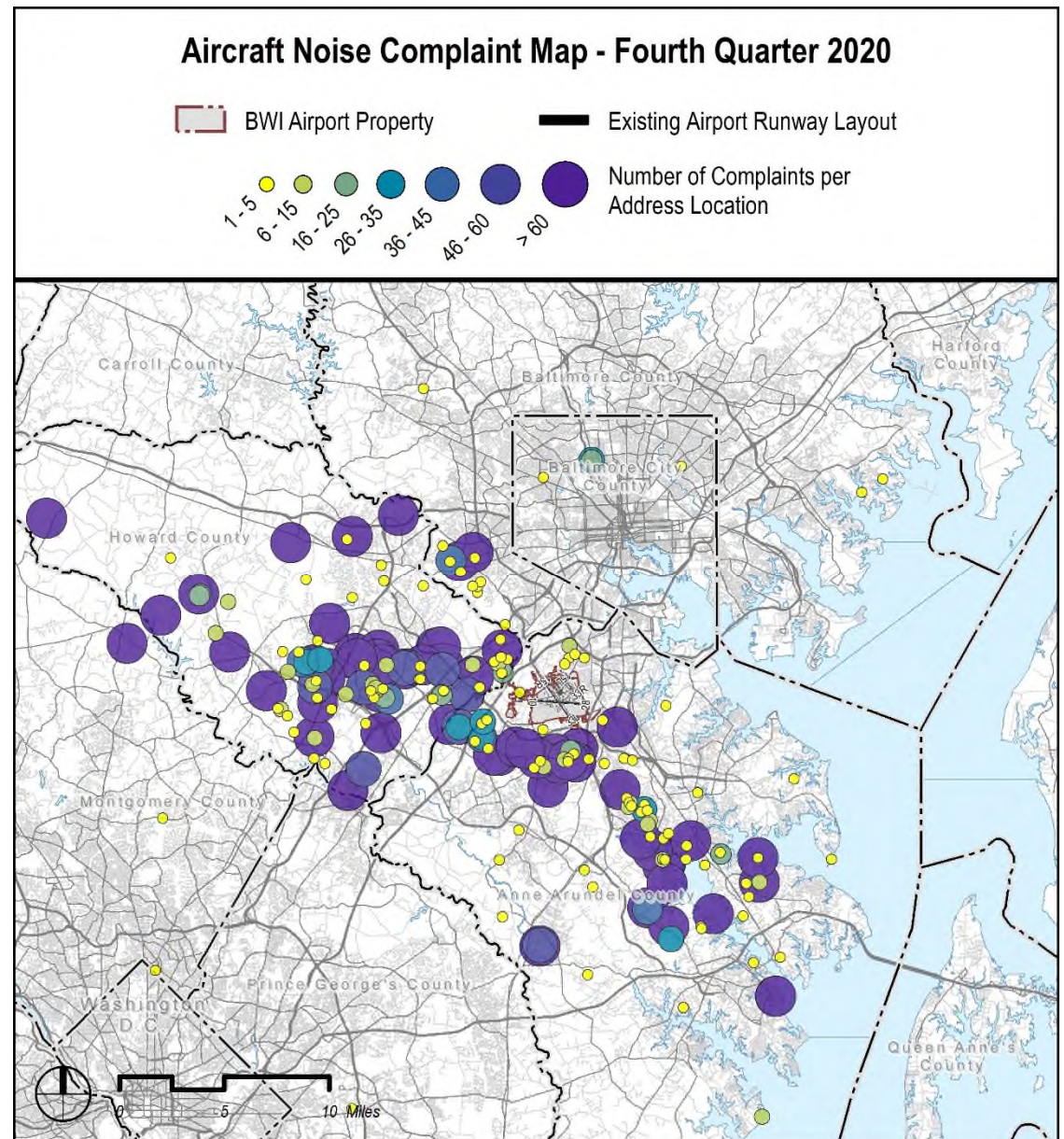
<http://www.maacommunityrelations.com/content/anznoiseupdate/noiseform.php>

The graphs show the number of complaints and complainants per community for the quarter.

There were 219,765 complaints (223 complainants) during the 4th Quarter of 2020.



The map to the right shows the locations and number of complaints for the 4th Quarter of 2020. The size and color of each caller location denotes the number of times a complaint was submitted during the quarter. Small yellow circles depict locations with fewer complaints while large darker circles depict greater numbers of complaints.



Community Enhancement Grant Program

Maryland Senate Bill 276 established an 11 member "Citizens Committee for the Enhancement of Communities Surrounding Baltimore/Washington International Thurgood Marshall Airport."

The intent of this legislation is to provide some benefit to those citizens living in communities impacted by the daily operation of BWI Marshall by allowing them the opportunity to apply for grants for transportation-related projects such as sidewalks, speed humps, street lights, etc. These communities must be located within the 1998 certified Airport Noise Zone or within two miles of the outermost noise contour.

For more information about the application process, or to get more involved, please see:

<https://maacommunityrelations.com/content/communityprograms/transportgrants.php>

The Community Enhancement Grant Committee met via TEAMS virtual platform on December 2, 2020 and recommended the approval of grant applications # 21-01, 21-02, 21-03 and 21-04 in the total amount of \$158,120.00.

Example of Eligible Project



Example of Completed Project





Outreach and Community Involvement

The MDOT MAA engages in on-going efforts to enhance the level of communication and interaction between the Airport and area residents.

The MDOT MAA Community Outreach Programs encourage the exchange of information between the MDOT MAA and local community groups and residents. These programs supplement the efforts of the BWI Marshall Airport Neighbors Committee to promote the active participation of local residents in Airport issues.

Specific services or activities provided by the MDOT MAA are listed in the table to the right along with the number of events or recorded reports.



DC Metroplex BWI Community Roundtable

The DC Metroplex BWI Community Roundtable is an MDOT MAA initiative formed at the request of the Federal Aviation Administration (FAA).

More information about the Roundtable, including meeting agendas, past meeting minutes, and presentation materials, is available at:

www.maacommunityrelations.com.

Public Education & Activities – Fourth Quarter of 2020

Committee Meetings	2
Community Meetings	1
Community Noise Monitoring Reports	0**
Airport Zoning Permits	88
eNews Express notifications	16

** As of December 30, 2020, there are five awaiting program restart from COVID19



Community Roundtable Meetings – 4th Quarter of 2020

- Roundtable meetings were held November 17, 2020 and December 15, 2020.
 - Highlights Include:
 - Technical Committee Update/Summary of November 10, 2020 meeting with the FAA
 - Roundtable Elections

OUTREACH AND COMMUNITY INVOLVEMENT

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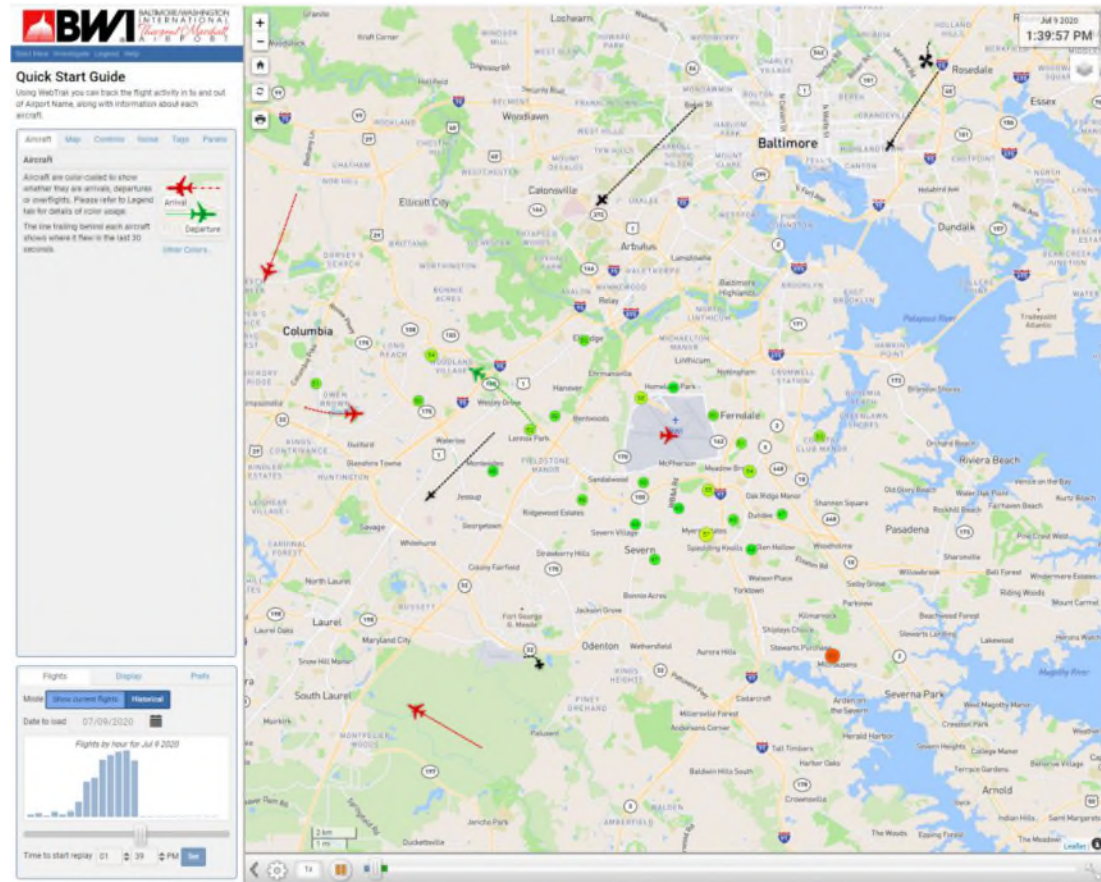


The BWI Marshall WebTrak system can be accessed from the airport website at:

<https://www.bwiairport.com/flying-with-us/about-bwi/airport-noise-webtrak> or the MAA Community Relations page at:
<https://www.maacommunityrelations.com/content/anznoiseupdate/flight-tracking.php>.

The WebTrak system provides historic and near real-time flight tracking information, as well as noise level data for users. The tool displays aircraft flights, weather information, BWI Marshall Airport noise monitor locations, and aircraft noise levels on a user-friendly map. The flight tracking system includes specific details about flights associated with BWI Marshall Airport, as well as information on air traffic transitioning through the region.

WebTrak users can research aircraft noise concerns by replaying flight tracks from specific times. The system's location tools enable users to clearly see flights relative to their location. Live data is delayed approximately 16 minutes for system data processing and aviation security requirements. Historic data can be viewed and is available for 90 days. Users may submit aircraft noise complaints to the MDOT MAA directly from the WebTrak system.



Office of Environmental Services - Noise Program

P.O. Box 8766

BWI Airport, MD 21240-0766

Noise Complaints

BWI Noise Hotline: (410) 859-7021

Online:

<http://www.maacommunityrelations.com/content/anznoiseupdate/noisecomplaints.php>